

STUDIES IN THE HELIANTHEAE (ASTERACEAE). XXX.

FOUR NEW SPECIES FROM PERU.

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Recent specimens from Peru collected by R. M. King and L. E. Bishop include representatives of four undescribed species of the tribe Heliantheae. The species are described here to allow duplicates to be distributed under the names.

HELIANTHOPSIS BISHOPII H. Robinson, sp. nov.

Plantae subarborescentes ad 3 m altae mediocriter vel multo ramosae. Caules subhexagonales dense flavo-lanati; pilis base vermiformibus apice perelongatis nematiformibus. Folia alterna, petiolis 5-13 mm longis dense lanatis; laminae ovatae vel anguste ovatae plerumque 3-6 cm longae et 0.8-2.0 cm latae base breviter acutae marginae integrae anguste reflexae apice anguste acutae vel acuminatae fere ad basem leniter trinervatae supra atro-virides minute subbulbatae dense scabridae subtus dense flavotomentosae vel lanatae. Inflorescentiae in ramis foliosis terminales sessiles unicapitatae. Capitula ca. 2 cm alta, involucra ca. 3 cm lata dense sordido-lanata; squamae involucri 45-50 ca. 4-seriatae reflexae lanceolatae 12-17 mm longae et 3-4 mm latae apice anguste acutae vel leniter acuminatae supra serisceae interiores glabrae subtus lanatae; paleae atrescentes oblongo-ellipticae ad 9 mm longae ca. 3 mm latae apice erectae breviter acutae extus glabrae in medio anguste carinatae. Flores radii ca. 30 in capitulo; corollae flavae ca. 30 mm longae in tubis 2.5 mm longis in laminis ad 3.2 mm latae apice anguste bidentatae extus pilosulae et minute glanduliferae in tubis densiores. Achaenia radii sterilia. Flores disci ca. 250 in capitulo; corollae inferne flavae distaliter nigrescentes 7 mm longae, tubis ca. 2 mm longis extus scabridis superne densiores, fauibus longe campanulatis 3.5 mm longis extus base dense scabridulae, lobis triangularibus ca. 1.5 mm longis et 0.8 mm latis vix scabridis; filamenta antherarum in parte superiore ca. 0.2 mm longa; thecae antherarum nigrae ca. 2.7 mm longae; appendices antherarum nigrescentes ovatae ca. 0.6 mm longae et 0.4 mm latae extus pauce glanduliferae. Achaenia disci submatura ca. 4 mm longa et 1 mm lata glabra; subulæ pappi pallidae deciduae linear-i-lanceolatae ca. 3 mm longae inferne ad 0.3 mm latae. Grana pollinis in diametro ca. 38 μm longe anguste spinulosa.

TYPE: PERU: Cajamarca: 62 kms NE of Cajamarca along the road to Celendin. Elevation 11,000 ft. Small tree to 3 meters

tall, ray flowers yellow, disc yellow-brown. 9 January 1983.
R. M. King & L. E. Bishop 9741 (Holotype, US).

Helianthopsis bishopii would key roughly in Robinson (1979) to *H. stuebelii* (Hieron.) H. Robins. also of northern Peru, but the latter has non-lanate stems and has more branching inflorescences with longer pedunculate heads. The new species actually seems closest to the more recently described *H. smithii* Ferreyra (1980) from the neighboring region of La Libertad, but the latter seems to be a smaller plant in all its parts with somewhat fewer flowers in the heads and yellow disc corollas and anther appendages. The latter also has more numerous and more prominent hairs on the lower half of the disc corolla throat.

HELIANTHOPSIS UTCUBAMBENSIS H. Robinson, sp. nov.

Plantae suffruticosae ad 1.5 m altae mediocriter ramosae. Caules brunnescentes teretes hispidi. Folia alterna; petiolis plerumque 1-2 cm longis; laminae ovatae vel anguste ovatae 4-10 cm longae et 1.5-4.5 cm latae base acutae vel leniter acuminate base vel fere ad basem ascendentiter trinervatae margine sub-integrae vel serrulatae planae apice anguste acutae vel distincte acuminate supra minute velutinae subtus cinereo-tomentellae. Inflorescentiae terminales divaricatae ramosae foliosae paucicapitatae, ramis ultimis maturitatis plerumque 2-4 cm longis dense hispidulis. Capitula 8-9 mm alta et ca. 12 mm lata; squamae involucri ca. 18-20 bi-tri-seriatae oblongo-lanceolatae 6-7 mm longae et ca. 2 mm latae apice acutae reflexae extus et distaliter intus dense hirtellae vel subtomentellae; paleae oblongo-ovatae ca. 5.5 mm longae et 1.5 mm latae apice acutae et in squamis interioribus reflexae extus sparse vel dense puberulæ in medio prominule costatae. Flores radii ca. 12 in capitulo; corollæ flavae ca. 10 mm longæ in tubis ca. 1.5 mm longae et in laminis ad 4.2 mm latae apice late bi-tri-lobatae extus scabridulæ et puberulæ superne in costis densiores, glandulis minutis plerumque inter costam dispositis. Achaenia radii sterilia. Flores disci ca. 50-60; corolla flavae 4.5-5.0 mm longae extus scabridulæ in faucibus in nervis densiores, tubis 1.0-1.5 mm longis, faucibus longe anguste campanulatis 2.0-2.5 mm longis, lobis ca. 1.0 mm longis et 0.7 mm latis submargine densius puberulentibus; filamenta antherarum in parte superiore ca. 0.25 mm longa; thecae antherarum pallidae ca. 1.7 mm longae; appendices antherarum ovatae ca. 0.4 mm longae et 0.3 mm latae extus saepe glanduliferae. Achaenia disci ca. 3 mm longa et 1.3 mm lata sericeo-setulifera; subulæ pappi pallidae deciduae linear-lanceolatae ca. 2.3 mm longæ inferne eroso-alatae ad 0.3 mm latae. Grana pollinis in diametro ca. 27 μ m longe spinulosa.

TYPE: PERU: Amazonas: Rio Utcubamba Valley, 3 kms along road S of Tingo. Elevation ca. 5500 ft. Shrub to 1 $\frac{1}{2}$ meters tall, flowers yellow. 21 January 1983. R. M. King & L. E. Bishop 9271 (Holotype, US). PARATYPES: PERU: Amazonas: 3 kms E

of Chachapoyas along road to Mendoza. Elevation ca. 7000 ft. Rays yellow, disc greenish yellow. 12 January 1983. R. M. King & L. E. Bishop 9155 (US); 6 kms along road W of Chachapoyas. Elevation ca. 6600 ft. Shrub 1½ meters tall, flowers yellow. 13 January 1983. R. M. King & L. E. Bishop 9193 (US).

Helianthopsis utubambensis is clearly a member of the species group in northern Peru having pale anther thecae (Robinson, 1979), and is geographically close to or sympatric with the other members of the group. The heads are of the size range nearest *H. matthewsii* (Hochr.) H. Robinson and *H. verbesinoides* (H.B.K.) H. Robinson but have reflexed involucral bracts and palea tips as in the more recently described *H. hutchisonii* H. Robinson and *H. sagasteguii* H. Robinson. Of the latter two, the inflorescence is more branched and foliose as in *H. sagasteguii*, but the pubescence is much smaller, nearer that of *H. hutchisonii*. The two related species seem to be separated somewhat geographically from the new species by being from Cajamarca in the Rio Marañón Valley at the eastern edge of Amazonas. The related species may be separated seasonally also, both having been collected in May while the present specimens are mature in January.

PERYMENTIUM BISHOPII H. Robinson, sp. nov.

Plantae suffruticosae ad 0.5 m altæ inferne mediocriter vel multo ramosæ. Caules atro-brunnescentes subteretes vel sub-haxagonales dense longe albide antrorse scabridi. Folia opposita; petiolis 1-2 mm longis; laminae ellipticae vel oblongo-lanceolatae plerumque 1-3 cm longæ et 0.3-0.9 cm latae base acutæ margine obscure subserrulatae leniter anguste reflexæ apice anguste acutæ fere ad basem valde trinervatae supra atro-virides micro-bullatae dense albo-scabridæ subtus dense appresse canescentiter strigosæ, pilis in parietibus rugulosis. Inflorescentiae in ramis terminales laxe ramosæ foliosæ paucæ et plerumque tripli-citer capitatae, ramis ultimis plerumque 3-7 cm longis dense canescentiter antrorse strigosæ. Capitula 7-9 mm alta late campanulata; squamae involucri ca. 10 herbaceæ suborbiculares ca. 5-6 mm longæ et 4-5 mm latae margine integrae distincte anguste reflexæ apice breviter obtusæ vel rotundatae extus dense canescentiter strigosæ longitudinaliter 6-8-nervatae; squamae basilares interdum ovatae breviter acutæ base minute dentatae; paleæ late lanceolatae ca. 5 mm longe argute acutæ scarisoæ superne ad medio costatae et paucæ strigosæ margine uni- vel bi-dentatae. Flores radii 12-14 feminei; corollæ flavae in tubis ca. 2 mm longi minute hispidulæ in laminis oblongæ ca. 10 mm longæ et 4 mm latae apice late tridentatae extus in costis strigulosæ. Flores disci hermaphroditi 50-75; corollæ flavae ca. 5 mm longæ, tubis ca. 1.3-1.5 mm longis extus glabris, faucibus anguste campanulatis ca. 3 mm longis extus plerumque glabris base paucæ scabridulis, lobis ca. 0.7 mm longis et 0.5 mm latis extus dense scabridulis; filamenta in

parte superiore ca. 0.35 mm longa; thecae antherarum nigrae 1.8-2.2 mm longae; appendices antherarum flavae ovatae ca. 0.6 mm longae et 0.4 mm latae; rami stylorum apice breviter acuti minute apiculati. Achaenia ca. 3.5 mm longa et 2 mm lata apice constricta pappifera in humeris anguste alata et breviter setulifera in superficiis superioribus dense hispidula; setae pappi breves 1-2 mm longae mediocriter deciduae flavae. Grana pollinis in diametro ca. 26 μ m.

TYPE: PERU: Cajamarca: 8 kms E of Cajamarca along road to Celenin. Elevation 8500 ft. Subligneous herb to 3 dm tall, flowers yellow. 9 January 1983. R. M. King & L. E. Bishop 9122 (Holotype, US). PARATYPES: PERU: Cajamarca: 5 km N along road from Cajamarca to Bambamarca. Elevation ca. 8600 ft. Uncommon subligneous herb in pasture, flowers yellow. 8 January 1983. R. M. King & L. E. Bishop 9120 (US); Ancash: just below Chancos at old sawmill (road to Vicos). Common, lax very scraggly shrublet hanging over banks on steep slopes. Alt. ca. 2850 m. 11 March 1964. P. C. Hutchison & J. K. Wright 4338 (US).

The species is distinct from others in Peru and Ecuador by the broad canescently strigose involucral bracts having slight but distinct raised costae in at least the middle. The rounded apical margin is also often narrowly reflexed and appearing thickened. The species seems closest in leaf form and geography to the common peruvian *P. featherstonei* Blake but that has flat less pubescent apically darkened involucral bracts. Both the other peruvian species, *P. matthewsii* Blake and *P. serratum* have broad dark flat tips on the involucral bracts, broader leaves, and the latter has more densely serrate leaves with less pubescent lower leaf surfaces.

WEDELIA EPISCOPALIS H. Robinson, sp. nov.

Plantae suffruticosae ad 1/2 m altae mediocriter ramosae. Caules brunnescentes subteretes dense patentiter vel leniter retrorse hispiduli. Folia opposita, petiolis 5-12 mm longis; laminae ovatae plerumque 3.0-6.5 cm longae et 1.5-3.3 cm latae base obtusae fere ad basem ascendentiter trinervatae margine remote minime mucrono-denticulatae apice acutae supra et subtus antrorse delicate sericeae subtus densiores canescentes. Inflorescentiae in ramis terminales uni- vel tri-capitatae, ramis ultimis 2-7 cm longis dense patentiter vel leniter retrorse hispidulis et perminute puberulis. Capitula ca. 1 cm alta late campanulata; squamae involucri ca. 12 suborbiculatae vel late oblongo-ovatae 6-8 mm longae et ca. 4 mm latae margine integrae apice obtusae vel breviter acutae inferne leniter chartaceae superne sensim submembranaceae extus vix striatae et dense puberulae; paleae oblongae apice abrupte breviter acutae extus subapice et ad medio dense puberulae caetera subglabrae. Flores radii ca. 12; corollae flavae, tubis ca. 2 mm longis glabris, laminis oblongis 10 mm longis et 4.5 mm latis subtus in costis dense hispidulis. Flores disci ca. 35; corollae sordido-flavae

ca. 5 mm longae, tubis ca. 1.5 mm longis glabris, faucibus anguste cylindraceo-campanulatis ca. 3 mm longis extus plerumque glabris, lobis ca. 0.8 mm longis et 0.6 mm latis extus dense scabridulis intus submargine dense longe papillate fimbriatis; filamenta in parte superiore ca. 0.3 mm longa; thecae antherarum nigrae ca. 2 mm longae; appendices antherarum ovatae ca. 0.45 mm longae et 0.3 mm latae; appendices stylorum apice anguste attenuatae. Achaenia ca. 6 mm longa dense sericeo-setulifera superne valde constricta in humeris truncate alata in collis minute scabridula; corona pappi brevis minute denticulato-fimbriata. Grana pollinis in diametro ca. 25 μ m.

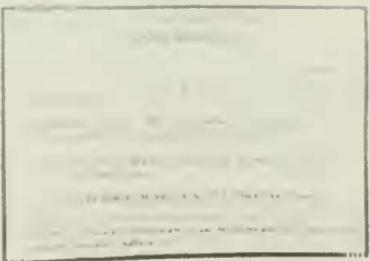
TYPE: PERU: Cajamarca: Rio Jequetepeque Valley, 2 km along road W of Magdalena. Elevation ca. 3800 ft. Subshrub 1/2 meter tall, flowers yellow. 7 January 1983. R. M. King & L. E. Bishop 9095 (Holotype, US).

The species does not have the long acute involucral bracts seen in many members of the genus including *W. grandiflora* Benth. which occurs in Peru. Still, there are no short outer bracts such as those of the distinctly graduated involucres in *W. jelskii* Hieron. of northern Peru. The bracts are more chartaceous basally than those in most related species, and the bracts bear a finer pubescence. The leaf pubescence is more sericeous than strigose and there are no evident glandular punctations.

As in two of the other species in this paper, the name honors the collector Luther Earl Bishop.

Literature Cited

- Ferreyra, R. 1980. Especies nuevas de Compuestas Peruanas. Bol. Soc. Peruana Bot. 8 (1-2): 75-82.
- Robinson, H. 1979. Studies in the Heliantheae (Asteraceae). XVIII. A new genus *Helianthopsis*. Phytologia 44 (4): 257-269.



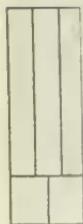
Helianthopsis bishopii H. Robinson, Holotype, United States National Herbarium. Photos by Victor E. Krantz, Staff Photographer, National Museum of Natural History.



Helianthopsis utubambensis H. Robinson, Holotype, United States National Herbarium.



Perymenium bishopii H. Robinson, Holotype, United States
National Herbarium



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Wedelia episcopalis H. Robinson, Holotype, United States National Herbarium.



Enlargements of heads. Top. *Helianthopsis utcubambensis*. Middle. *Perymenium bishopii*. Bottom. *Wedelia episcopalii*.